FIFTH CONTRIBUTION TOWARDS A NEW CLASSIFICATION OF AUSTRALIAN ASILIDAE (DIPTERA).

By G. H. Hardy,

Walter and Eliza Hall Fellow in Economic Biology,
Queensland University, Brisbane.

[Read 25th June, 1930.]

In this and future parts of my studies in Asilidae, I am including notes on certain exotic forms that come within the tribes dealt with; for specimens received I am indebted to the late Prof. M. Bezzi and to Prof. J. Herve-Bazin for European genera, whilst Professor R. Painter and Mr. W. S. Bromley have supplied North American genera.

New characters are being employed in these papers and many of them are fairly well maintained in the various sections, but it must be understood that none of them is necessarily of generic or tribal importance; they are recorded only as they are found on the material before me, and occasionally some misunderstanding of these characters may arise because they are founded chiefly on preserved material. Closer investigation on fresh and supple material may show the possibility of other interpretations so, as far as possible, all such characters are examined on newly killed material. Again, certain terms that have long been in use are now shown to be inapplicable, but more suitable names do not seem to have been substituted in such cases. One such example is the so-called "metapleura", a bulging part just above the metathoracic spiracle. The hairs and bristles thereon seem to have some generic and subgeneric value, varying from an abundance of hairs to a row of bristles, or they may even be absent. Other parts of the pleura may also have hair on them, but these have not been studied and in the tribes here dealt with they are comparatively scarce.

Prothorax.—Already in these papers I have indicated that two types of prothorax are found, one being the form with one complete sclerite covering the whole of the underside, the other having this area divided so that there is a ventral plate surrounded by a membraneous area. It would seem the first of these is the primitive form and, as the part became soft and membraneous, the plate that was left near the anterior coxae took on its characteristic appearance. Part of it overlapped a membrane, another part forming a continuous surface with the softened portion of the sclerite, and often retaining the pollinose covering on that soft area. In *Ommatius* the sclerite has become only partly broken down in this manner. It appears rather obscure at times, whether this ventral plate has been isolated or not, and I find, contrary to my earlier statement, that it is

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formed in the Leptogasterini, at least in Australian material. The sternum here differs from other cases by the apparent failure to develop a section overlapping part of the surrounding membrane, and therefore it looks as if the sternum has a uniform density throughout its more or less uniformly brown area.

Chaetotaxy.—The ocellar tubercle usually contains a group of hairs or bristles which vary from a rather dense group of hairs to a smaller number, some of which are bristly in nature. A small group of bristles only may occur, varying from eight to two pairs, or even to a single pair, and in most of these cases the few hairs left may be inconspicuous. This vestiture may even be entirely absent as on *Chryseutria*. The character varies partly in accordance with the general hirsute nature, or otherwise, of the insect and, in the main, appears to be specific rather than generic in importance.

The hairs are more or less plentiful on *Thereutria* and its allies, but are reduced on *Diogmites* and the Australian form that is very near it in the key. They vary on *Neosaropogon* and allies, are plentiful on *Stenopogon* and allies, and also on *Bathypogon*; the two latter groups contain rather hairy species, whereas *Microstylum*, which contains bare species, has them reduced. Throughout the tribe Stichopogonini they are numerous or fairly so.

The dorsal thoracic bristles are rather disappointing in Australian material; they are not always as consistent as one would expect, but some use may be made of them if one considers the general tendency to have them limited to a certain number rather than the actual numbers on any part.

The bristles on Stichopogonini are more consistent in the material before me and all the genera are included in the table below; in the tribe Saropogonini only Australian material is listed and the exotic species placed in the same genera do not necessarily conform.

Thereutria, *Metalaphria*, *Rachiopogon*, and the unnamed genus containing *N. froggattii* have the usual row of hairs, bristly hairs or bristles, rarely absent in any genus, on the anterior section of the pronotum and, in addition, one or two lateral bristles occur on the posterior section; in this they contrast with all other Australian material.

Many of the larger species have a few strong bristles on the humeral callus, but these seem to be specific rather than generic in value. Again, the dorsocentrals may be present, often indicated, but frequently absent. Normally there are up to three pairs of notopleural bristles or, on the larger species, the number may be doubled, so that six are evident on each side, arranged in two rows, one of which is much weaker than the other and is ignored in the table. The usual three, when present, are arranged in a line or triangularly.

On *Chryseutria* there is one very strongly developed lateral bristle on the first abdominal segment, whilst none is present on *Aterpogon*, *Questopogon*, *Cyrtopogon* and *Pseudobasipogon*, all of which are rather hairy in this region; on all other genera of the Saropogonini there are, except in rare examples, three or four bristles. In Stichopogonini these bristles are only definitely developed on *Neopogon; Cryptopogon* may have one or more hairs black and bristly. Elsewhere on the abdomen, bristles are found only in the genus *Microstylum* and the subgenus *Scleropogon*, in which they are placed laterally on the second segment, on the former anteriorly, on the latter posteriorly, to the row of impressions that mark the interior muscular attachments.

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Table of dorsal thoracic bristles.

Genera.	Pairs of bristles.					Scutellar (total number; those in excess of six form a fringe, often with hairs).	Notes.
	Notopleural.	Supra-alar.	Postalar.	Presutural dorsocentrals.	Postsutural dorsocentrals.		
SAROPOGONINI.							
Chryseutria ..	—	—	—	—	—	—	Very bare species.
Aterpogon ..	—	—	—	—	—	10–12	Very hairy species; bristles not apparent.
Questopogon ..	2–3	2	3	—	4	10	
Thereutria ..	2–3	2	2–3	3	4	4–6	
Metalaphria ..	2	2	2	3–4	4–5	2–4	On small species reduced in number.
Rachiopogon ..	2	2	1–2	—	0–3	2	
Genus unnamed	3	2	3	—	4–5	2	(*Neosaropogon*) *froggattii* D. & F.
Saropogon ..	2	2	2	—	5	2	*S. gamarus* is without scutellar bristles.
Neocyrtopogon ..	2	2	1	—	—	—	
Neosaropogon ..	2	2	1	—	—	—	*N. princeps* has 2–4 scutellars, and another species has only notopleurals.
Neodioctria ..	2	1	—	—	—	—	
Erythropogon ..	1	1	—	—	—	—	*E. maculinevris.*
	2	3	1	—	—	8	*E. australis* Macq.
Stenopogon ..	2–3	1	1–3	—	—	6–8	
Bathypogon ..	3	1	2	—	3–4	4	Very consistent in genus; *Microstylum* has 2 supra-alar, and 3 laterals on pronotum, the rest as on *Bathypogon*.
STICHOPOGONINI.							
Laphystia ..	3	1	3	—	—	—	
Lasiopogon ..	2–3	1–2	1–2	3	3	8	
Neopogon ..	1	—	1	—	—	—	
Clinopogon ..	1	1	1	—	2	—	Scutellum with fringe of numerous long hairs.
Cryptopogon ..	1	1	1	—	2	—	Scutellum with fringe of scanty short hairs.

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The classification of this tribe is fraught with difficulties; it seems to be world-wide and therefore important, and my endeavour to place all genera belonging to it has met with but partial success. Many genera hitherto proposed may not be worthy even of subgeneric status, but I have, as far as possible, maintained each known to me as a separate segregate in the following key.

Key to the genera of the Saropogonini.

1. Anterior tibiae provided with a spur 2
   Anterior tibiae without a spur 13
2. Thorax with two stout spines, one above the base of each wing. Prothorax rather long, the posterior section of the dorsal portion being twice the length of the anterior part and divided from it by a broad U-shaped depression. A few scattered hairs above metathoracic spiracle. Antennae with three segments and a spine, the third being twice as long as the two basal ones. Scutellum without bristles, apex of first abdominal segment with only one lateral bristle. Venation simple ..... *Chryseutria* Hardy.
   Thorax without such spines 3
3. Antennae with four segments and a spine, scutellum with a fringe of bristles, rarely bare. Venation simple. Face invariably with erect hairs above tubercle 4
   Antennae with three or four segments and a spine; face hairy or bare above tubercle; if antennae have four segments the face is bare, at most with a few depressed hairs 6
4. Soft hairs distributed over the whole face which is prominent but without a defined tubercle or moustache. A row of bristles above metathoracic spiracle. Without lateral bristles on first abdominal segment, abdomen widening to apex of second and third segment, thence narrowing on female, and on male more or less parallel sided ..... *Aterpogon*, n. gen.
   Face with well defined moustache 5
5. Tubercle of face very large, and the hair abundant. With abundant hair above metathoracic spiracle, the bristles not well defined. With lateral bristles on first abdominal segment; abdomen strongly tapering to its apex .... *Questopogon* D. & F.
   Tubercle of face very small and containing a simple moustache; head at base of antennae also projects tubercle-like. With few weak hairs and bristles above metathoracic spiracle. Without lateral bristles on first abdominal segment; abdomen strongly club-shaped. Scutellum may be bare or may have a fringe of bristles. Hair on face rather sparse ..... *Erythropogon* White.
6. Abdomen strongly tapering from base; scutellum with bristles, rarely without. Antennae with three segments and a spine. One or two outstanding and isolated lateral bristles on pronotum, except on *Diogmites* and perhaps certain other exotic forms 7
   Abdomen club-shaped or cylindrical. Scutellum generally without bristles. Antennae usually with four segments and a spine. Without lateral bristles on pronotum, except on certain exotic forms 11
7. Abdomen of normal length or rather short, most or all of its segments being shorter or hardly longer than wide 8
   Abdomen very long, the second and subsequent segments being all conspicuously longer than wide. With a row of strong bristles above metathoracic spiracle. ..... Gen. ———
8. Numerous long hairs above metathoracic spiracle and amongst them bristles may be fairly well defined. Moustache rather bushy. Third antennal segment about as long as the basal segments combined. Scutellum with two or more marginal bristles. Veins R_1 and R_{2+3} meet before or at the wing-margin ..... *Thereutria* Loew.
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9. Third antennal segment about as long as the two basal segments combined. Veins R_1 and R_{2+3} may meet before the wing margin, or M_3 may meet M_4. Scutellum with (or ? without) bristles 10

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Third segment of antennae twice the length of the basal segments combined .... *Rachiopogon* Ricardo.

10. Prothorax normal, the depression between the two equal sections of pronotum being V-shaped. Veins R_1 and R_{2+3} meet at or before the wing-margin .... *Metalaphria* Ricardo.

Prothorax very long, the posterior section being twice as long as the anterior one and a broad U-shaped depression divides them. M_3 and M_4 meet at or before the wing margin ..... *Diogmites* Loew.

11. Scutellum with a pair of bristles, rarely without them. Antennae with four segments and a minute spine (fourth segment missing on European specimens). Thorax normal (but considerably arched on exotic forms). Abdomen normal, rather parallel sided (but may widen towards apex on exotic forms). With a row of bristles above metathoracic spiracle. Two postalar and some dorsocentral bristles on Australian species ..... *Saropogon* Loew.

Scutellum without bristles, or, if present, the abdomen is elongate, very slender and more or less club-shaped. A row of bristles and some hairs almost invariably present above metathoracic spiracle; bristles often weak, with only one postalar and without dorsocentrals 12

12. Face prominent, bulging and bare, moustache scanty and on an almost linear tubercle that is hardly discernible. Antennae with only three segments and a minute spine ..... *Neocyrtopogon* Ricardo.

Face normal, not bulging. Antennae with four segments and a spine, the fourth segment rarely absent ..... *Neosaropogon* Ricardo.

13. Face prominent and covered with hairs, but without a definite tubercle or moustache. With abundant hairs above metathoracic spiracle 14

Face with well formed tubercle and moustache 15

14. Face covered with very dense hair. Non-metallic species, dorsally rather hairy. ..... *Cyrtopogon* Loew.

Face covered with moderately dense hair. Metallic species, dorsally bare .... *Pseudoholopogon* Strolb.

15. Vein M_3 running into M_4 and forming an almost continuous but sinuous line with the median cross-vein 18

Venation usually simple, but if M_3 meets M_4, it never forms a continuous line with the median cross-vein, but is at right angles to it, or forms an acute angle with M_4 16

16. Face broad, about the width of one eye; tubercle restricted to a very small area above oral margin. With hairs above metathoracic spiracle .... *Neodioctria* Ricardo.

Face narrow, at least near antennae where it is only about half the width of an eye; tubercle large, reaching half-way towards antennae or further 17

17. Species with antennae situated so that in profile they are seen to be about one-third the depth of eye. If higher there are no hairs or bristles above metathoracic spiracle ..... *Stenopogon* Loew. 19

Species with antennae situated high up on the head, so that in profile they are seen to be at one-fourth the depth of the eye. Face with very short stiff hairs reaching from tubercle to very near antennae. With a row of bristles and short stiff hairs above metathoracic spiracle ..... *Ospriocerus* Loew.

18. Face with a large tubercle covered with bristles. With abundant hairs above metathoracic spiracle. Only one supra-alar bristle present. M_1 and R_5 run to wing border separately. Wings relatively short ..... *Bathypogon* Loew.

Face with a small tubercle and bare; moustache confined to the oral margin. Only a row of bristles above metathoracic spiracle. Two supra-alar bristles present. M_1 and R_5 meet before wing margin ..... *Microstylum* Macquart.

Key to subgenera of Stenopogon.

19. Thorax laterally very hairy, the hairs, including those above metathoracic spiracle, very long and fine. Face with a batch of very long hairs below antennae. Pronotum without marked bristles. Hypopygium inverted .... *Neoscleropogon* Malloch.

Thorax laterally rather bare, only a few hairs present. Face below antennae and above tubercle often bare. Hypopygium normal 20

Third segment of antennae twice the length of the basal segments combined .... *Rachiopogon* Ricardo.

10. Prothorax normal, the depression between the two equal sections of pronotum being V-shaped. Veins R_1 and R_{2+3} meet at or before the wing-margin .... *Metalaphria* Ricardo.

Prothorax very long, the posterior section being twice as long as the anterior one and a broad U-shaped depression divides them. M_3 and M_4 meet at or before the wing margin ..... *Diogmites* Loew.

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Face with a small tubercle and bare; moustache confined to the oral margin. Only a row of bristles above metathoracic spiracle. Two supra-alar bristles present. M_1 and R_5 meet before wing margin ..... *Microstylum* Macquart.

Key to subgenera of Stenopogon.

19. Thorax laterally very hairy, the hairs, including those above metathoracic spiracle, very long and fine. Face with a batch of very long hairs below antennae. Pronotum without marked bristles. Hypopygium inverted .... *Neoscleropogon* Malloch.

Thorax laterally rather bare, only a few hairs present. Face below antennae and above tubercle often bare. Hypopygium normal 20

20. With hairs and strong bristles above metathoracic spiracle. Fourth antennal segment very long, about two-thirds the length of the third. Face bare. Many strong bristles on pronotum, including a group of lateral ones on the posterior portion ..... *Scleropogon* Loew.

Without hairs or bristles above metathoracic spiracle. Fourth antennal segment normal, about one-fourth the length of the third or less. Face bare or hairy. Hair of prothorax forming many slender bristles including a lateral group on the pronotum ..... *Stenopogon* Loew.

Genus Erythropogon White.

Two species belong here; they are very dissimilar in many characters, but both conform to those given in the key. The typical form, *E. maculinevris*, was said to bear a resemblance to an ichneumon in the shape of the abdomen and the long antennae, whilst the other has been compared with a vespoid wasp in appearance. The relationship of the genus would appear to be nearest to the *Neosaropogon* group, but at present there is little information that supports the view.

Erythropogon australis Macquart.

Dasypogon australis Macquart, *Dipt. Exot.*, i (2), 1838, 45; Walker, *List Dipt. Brit. Mus.*, vi, suppl. 2, 1854, 482; Ricardo, *Ann. Mag. Nat. Hist.*, (8) ix, 1912, 350.—*Dasypogon limbipennis* Macquart, *Dipt. Exot.*, suppl. 1, 1847, 62; Walker, *List Dipt. Brit. Mus.*, vi, suppl. 2, 1854, 479.—*Brachyrrhopala limbipennis* Ricardo, *Ann. Mag. Nat. Hist.*, (9) i, 1912, 487; White, *Proc. Roy. Soc. Tasmania*, 1916, 157.—*Erythropogon limbipennis* Hardy, Proc. Linn. Soc. N.S.W., li, 1926, 308.—*Dioctria tasmanica* Walker, *Ins. Saund. Dipt.*, i, 1851, 85.

Ricardo examined the type of *D. australis* Macquart, which is evidently mutilated or in poor condition, and she states that it may be easily recognized by the wings, for which purpose she described the pattern. She also stated that the apex of the abdomen has spines, the scutellum is reddish with long yellow bristles, the fourth posterior cell of the wings is wide open and the legs are yellowish. In all these the present species agrees, whereas the absence of the tibial spur (spine of Ricardo) is the only character given by her that disagrees; probably the spur was present but overlooked. Again a comparison of Macquart's two descriptions, nine years apart in date of publication and differing somewhat, shows that both are equally applicable to this species. Ricardo stated that Walker's species belongs here, and the description leaves no doubt on this point.

Genus Aterpogon, n. gen.

The species upon which this genus is founded has its nearest relationship with *Questopogon*, and its characters are given in the key. To this genus, *Brachyrrhopala bella* White probably belongs, but the species described below is not the same as White's species, which I have seen on two occasions.

Aterpogon cyrtopogonoides, n. sp.

♂. Face greyish and with long yellowish hairs. Proboscis, palpi and antennae black. Head behind whitish, and with ocular cilia and scanty beard white. Thorax black with postalar callus and scutellum brown and a golden patch above scutellum; the pleura is golden, this colour extending on to the coxae; hairs on dorsum long and thin, and above the metathoracic spiracle are similar hairs, amongst which a row of bristly hairs may be detected; long bristly cilia occur

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along the apical margin of the scutellum. Abdomen mainly black, with long scattered hairs; the second to sixth segments bordered with reddish-brown, which colour increases in width on the successive segments, and the seventh is entirely brown. Hypopygium black. Legs brown with the apex of metatarsus, the subsequent segments and the coxae black. Wings hyaline, with the basal half smoky.

♀. Similar to the male, the brown border of the abdominal segments less distinct, and the eighth segment black. Anterior femora fuscous at base for about one-third the length on the anterior side.

Length, 6–8 mm.

Hab.—Queensland: Brisbane (1 ♂, 1 ♀); a pair taken by me when sweeping grass at Mt. Coot-tha, 12th December, 1920. New South Wales: Albury (1 ♂, 6.1.29, F. E. Wilson), a much larger specimen but, I believe, the same species.

Genus Questopogon Dakin & Fordham.

Two females are represented in the South Australian Museum, and another (Denman, N. S. Wales, 26.12.22, A. P. Dodd) in Mr. J. S. Mann's collection, but the antennal characters do not conform to those given for the typical species; most of the specific characters agree, however, and all the principal structures given by Dakin and Fordham equally apply, so I have little doubt concerning the generic relationship.

Genus Metalaphria Ricardo.

This genus was based on a single species, and of it I have four species before me. Two are presumably near *M. australis* Ric., the third is *M. aurifacies* White, and the fourth is described below as new. There is some doubt concerning the original species which, possibly, may not belong to the genus as here understood. The small species show reduced thoracic bristles, there being only one pair each of supra-alar and postalar, and also dorsocentral bristles.

Metalaphria tessellata, n. sp.

♂. A brownish-yellow species with the whole dorsal area moderately tessellated, so that the pattern changes according to the reflection of the light. Moustache and antennae yellow; proboscis and palpi black with white hairs; beard and bristles behind head yellow. On thorax thin dark stripes evident. The bristles above the metathoracic spiracle distinct, and a few short hairs to be detected near them. The abdomen has dark patches on each segment, chiefly at the sides. Legs yellow throughout, but the intermediate and posterior femora darkened above towards the apex, and also at the apex of the tibiae. Wings hyaline, but yellowish towards the base, and the veins R_1 and R_{2+3} meet at or, usually, before the apex.

♀. Similar to the male, but the seventh and eighth segments of the abdomen darker and without tessellation.

Length, 12–15 mm.

Hab.—Queensland: Brisbane, throughout the summer months, mainly on sandy tracks at Sunnybank, but not common, and their colour makes them very difficult to detect. In the field they are readily mistaken for the genus *Bathypogon*. The type series consists of seven males and three females. South Australia: Two specimens in the South Australian Museum may belong here, one from Angas Plains, the other without further locality.

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Genus Rachiopogon Ricardo.

This genus was proposed for a single species, *Dasypogon grantii* Newman, and in it I am placing related species that have the third antennal segment twice the length of the two basal ones combined. In addition, on the under side of the anterior tibiae there is but one outstanding long bristle, contrasting with two that occur on *Thereutria* and *Metalaphria*; an exception in the latter genus occurs on small species, where the bristles in general may be much reduced.

Relatively this becomes a complex when compared with *Thereutria* and *Metalaphria*, and the coloration of the species is very diverse. Besides those recorded below, I believe *Dasypogon luctuosus* Macquart may belong here, as I have from Chinchilla, Queensland, a species that agrees very closely with the description.

Rachiopogon carbo Walker.

Dasypogon carbo Walker, *Ins. Saund. Dipt.*, i, 1851, 87; *List Dipt. Brit. Mus.*, vi, suppl. 2, 1854, 478; Ricardo, *Ann. Mag. Nat. Hist.*, x, 1912, 350.—*Rachiopogon carbo* Hardy, Proc. Linn. Soc. N.S.W., li, 1926, 308.—? *Dasypogon limbinervis* Macquart, *Dipt. Exot.*, suppl. 5, 1854, 71.

A black species with black wings; the fourth and fifth abdominal segments are red or mainly so, but this colour seems to vary so that only one of these segments may be red. Macquart's description is very similar but the wings are lighter, and the record is from Sydney.

Hab.—North-west Victoria: Bannerton (A. Nicholson) in collection of Mr. F. E. Wilson; another pair from the same locality, but entirely black, may also belong here. South Australia: 1 ♂, 2 ♀ without further locality in the South Australian Museum. There are further specimens in collections and, as far as yet known, it would seem to be limited to these two States.

Rachiopogon nigrinus Ricardo.

Neosaropogon nigrinus Ricardo, *Ann. Mag. Nat. Hist.*, (9) i, 1918, 60.—*Rachiopogon nigrinus* Hardy, Proc. Linn. Soc. N.S.W., li, 1926, 308.

In 1926 (these Proceedings, li, p. 305), I drew attention to two species standing under the name *Neosaropogon nigrinus*, one of them being an *Ommatius*. The identity of the other has now been accepted as correct; Mr. F. H. Taylor has sent me a specimen of the same form, which specimen he informs me is part of the type series, and I have compared it with the description, finding it agrees in every character. In the original description this species is said to be related to *N. claripes* Ric., but this is hardly the case, for on structural grounds it must be placed in *Rachiopogon*.

Rachiopogon rubescens White.

Saropogon rubescens White, *Proc. Roy. Soc. Tasmania*, 1913, 271.

The type is before me, and the antennae are broken, but another specimen which I have seen shows that the third antennal segment conforms to *Rachiopogon*, with which other characters agree. The resemblance to *Saropogon* is superficial and White had not recognized *S. sergius* Walker, to which he allied it.

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As pointed out on a previous occasion, a new generic position is wanted for *Neosaropogon claripennis* Ricardo and *Neosaropogon froggattii* Dakin & Fordham.

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Genus Diogmites Loew.

The genus *Diogmites* has long stood as a synonym of *Deromyia* Phil., but there would seem to be no reliable data available to confirm this, and for Australian material the genus *Deromyia* has been used to harbour a complex. There are four species of *Diogmites* before me from North America, and these are certainly Saropogonini in affinities; there is an undescribed Australian species that conforms in many respects, but it differs in having no scutellar bristles and vein M_3 does not meet M_4. For *Deromyia australis*, Ricardo gives the character of the ovipositor as "prominent below", which description eminently fits yet another form that I am unable to place in this tribe so, pending further information, I am omitting the generic name *Deromyia* from any segregate, and I think it very likely the genus will be found to be limited to South America.

Genus Saropogon Loew.

I would retain temporarily one described species, *Saropogon semirufum* Bigot, of which I have seen one specimen, a female. An ally to it is from the Blue Mts., and two further species are from Brisbane. Two European and one North American species are before me, and some differences in characters are noted in the key. The American species is so very large that at first sight it appears distinct; this species, *S. dispar* Coq., superficially resembles a *Diogmites*, but in structure it differs. The American and Australian species have the fourth antennal segment, the European ones seem to be without it. The abdomen of the Australian forms is relatively longer than the others and tends to taper towards the apex, whereas it tends to widen, at least on the males, on the others. Exotic forms have one or two outstanding lateral bristles on the posterior section of the pronotum, a character missing on the Australian species.

A new genus close to this has a superficial appearance of the European species of *Saropogon*, but the moustache is more bushy, and other characters would exclude it. It is readily recognized by the abdomen broadening towards the apex and it contains one of the commonest Brisbane species which was referred to as a *Saropogon* in my earlier papers.

Saropogon gamarus Walker.

Dasypogon gamarus Walker, *List Dipt. Brit. Mus.*, ii, 1849, 346; *ibid.*, vi, suppl. 2, 1854, 486.—*Lasiopogon gamarus* Kertesz, *Cat. Dipt.*, 1909, 73.—*Dasypogon suavis* Walker, *Trans. Ent. Soc. Lond.*, n.s., iv, 1857, 327.—*Saropogon suavis* Ricardo, *Ann. Mag. Nat. Hist.*, (8) ix, 1912, 146.—*Neosaropogon suavis* Hardy, Proc. Linn. Soc. N.S.W., lii, 1927, 397.

Ricardo thinks *Dasypogon analis* Macquart may be this species; the type is said to be without a head and the abdomen is yellow. It is not clear if there are markings on the abdomen of the specimen seen by her, as Ricardo only refers to them in respect to the original description. Macquart's remarks concerning

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Although this species is without scutellar bristles, the other bristles, and the character of the abdomen, this being much shorter than in *Neosaropogon*, suggest that the affinities are as here given.

Genus Neocyrtopogon Ricardo.

The excavation between the eyes on this genus was said to be "eliminated"; this should have been "almost eliminated", but there seems to be some variation in this respect. I have now seen a long series of specimens and find only one species represented amongst them, but it varies in size and markings.

Neocyrtopogon maculata Roder.

Brachyrrhopala maculata Roder, *Wien. Ent. Zeit.*, ii, 1883, 274; Hardy, *Proc. Roy. Soc. Q'land*, xli, 1929, 60.—*Neocyrtopogon bifasciatus* Ricardo, *Ann. Mag. Nat. Hist.*, (8) ix, 1912, 589.

In 1929, when revising species of *Brachyrrhopala*, I excluded *B. maculata* from that genus, and suggested that it might be a species of *Neosaropogon*. When checking characters for its generic position, it became evident that it was a *Neocyrtopogon* and, moreover, the same species as that upon which the genus was founded.

Genus Neosaropogon Ricardo.

This is a large genus in Australia, of which I have eight species before me. Two described forms are recognizable and neither quite conforms to the remainder. The genus would seem to be related to Australian species placed under *Saropogon*, not to the exotic forms placed there, and it is closely akin to *Neocyrtopogon*, under which it may ultimately be placed as a subgenus. The typical form may or may not have the fourth antennal segment present; it occurs in the others.

Neosaropogon princeps Macquart.

Previously (these Proceedings, liii, 1928, 472) I drew attention to the fact that there may be a complex standing under this name. Three of Walker's names are placed as synonyms by Ricardo (*Ann. Mag. Nat. Hist.*, (8) ix, 1912, 591) who stated that, amongst characters given on the type, on the abdomen "the third segment is almost wholly dark" as compared with "only dark on the anterior border" for the other forms. These colour characters seem to conform on Queensland and New South Wales specimens respectively, so it is possible the one known to me only from Queensland may be the typical species and the remainder would then come under one of the names proposed by Walker.

Neosaropogon nitidus Macquart.

Dasypogon nitidus Macquart, *Dipt. Exot.*, suppl. 1, 1846, 61; Walker, *List Dipt. Brit. Mus.*, vi, suppl. 2, 1854, 479.—*Brachyrrhopala nitidus* Ricardo, *Ann. Mag. Nat. Hist.*, ix, 1912, 585; White, *Proc. Roy. Soc. Tasmania*, 1916, 156; Hardy, *Proc. Roy. Soc. Tasmania*, 1916, 271.—*Neosaropogon nitidus* Hardy, Proc. Linn. Soc. N.S.W., lii, 1927, 397.—*Dasypogon sergius* Walker, *List Dipt. Brit. Mus.*,

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Genus Neosaropogon Ricardo.

This is a large genus in Australia, of which I have eight species before me. Two described forms are recognizable and neither quite conforms to the remainder. The genus would seem to be related to Australian species placed under *Saropogon*, not to the exotic forms placed there, and it is closely akin to *Neocyrtopogon*, under which it may ultimately be placed as a subgenus. The typical form may or may not have the fourth antennal segment present; it occurs in the others.

Neosaropogon princeps Macquart.

Previously (these Proceedings, liii, 1928, 472) I drew attention to the fact that there may be a complex standing under this name. Three of Walker's names are placed as synonyms by Ricardo (*Ann. Mag. Nat. Hist.*, (8) ix, 1912, 591) who stated that, amongst characters given on the type, on the abdomen "the third segment is almost wholly dark" as compared with "only dark on the anterior border" for the other forms. These colour characters seem to conform on Queensland and New South Wales specimens respectively, so it is possible the one known to me only from Queensland may be the typical species and the remainder would then come under one of the names proposed by Walker.

Neosaropogon nitidus Macquart.

Dasypogon nitidus Macquart, *Dipt. Exot.*, suppl. 1, 1846, 61; Walker, *List Dipt. Brit. Mus.*, vi, suppl. 2, 1854, 479.—*Brachyrrhopala nitidus* Ricardo, *Ann. Mag. Nat. Hist.*, ix, 1912, 585; White, *Proc. Roy. Soc. Tasmania*, 1916, 156; Hardy, *Proc. Roy. Soc. Tasmania*, 1916, 271.—*Neosaropogon nitidus* Hardy, Proc. Linn. Soc. N.S.W., lii, 1927, 397.—*Dasypogon sergius* Walker, *List Dipt. Brit. Mus.*,

ii, 1849, 473; *id.*, vi, suppl. 2, 1854, 477.—*Lasiopogon sergius* Kertesz, *Cat. Dipt.*, iv, 1909, 73.—*Saropogon sergius* Ricardo, *Ann. Mag. Nat. Hist.*, ix, 1912, 585.—*Dasypogon festinans* Walker, *Ins. Saund. Dipt.*, i, 1851, 92.—*Brachyrrhopala nitidus* var. *dissimilans*, Hardy, *Proc. Roy. Soc. Tasmania*, 1916, 271.

The above synonymy is not new, but there are one or two discrepancies in it. Ricardo states that *D. festinans*, from unknown locality, is identical with *D. sergius* Walker, from New South Wales; she also added "from the description of *Dasypogon nitidus* Macquart, from Tasmania, it is possibly the same species as this". Judging from her descriptions and remarks, there would be no doubt concerning the synonymy, but Walker's description of *D. sergius* does not correspond in markings, and if the synonymy is correct, the locality is wrong.

With regard to the variety *dissimilis*, this has not been met with again, but Mr. C. E. Cole took an intermediate form that has the face with normal colouring, otherwise it resembles the variety. In build it resembles that of *N. princeps* to a remarkable extent.

The species has the scutellum with two pairs of bristles, and there are a few depressed hairs on the face above the tubercle; these two characters are unique to the species, which is only known from Tasmania.

Genus Neodioctria Loew.

The typical form, *N. australis* Ricardo, from the Blue Mts., is before me. In general resemblance it conforms to *Neosaropogon*, but is without the tibial spur and the abdomen does not tend to widen at the apex but is more or less uniformly wide. In the genitalia of the male, being somewhat globular and having a conspicuous ventral plate, it conforms best to the *Stenopogon* group. On many specimens the hypopygium is inverted, in other cases it is turned through 90 degrees or more.

Genus Stenopogon Loew.

With the possible exception of *Leptogaster*, *Neosaropogon* and other genera with very elongate slender abdomen, the Asilidae have the first sternite of the abdomen divided into two parts, a modification that seems to be responsible for the flexibility of the abdomen at its base. In Therevidae this sclerite may be partly divided, or even partially formed into three sections. Malloch has used the hairy nature or otherwise of this divided sclerite in order to group species of genus *Stenopogon* into divisions, but the character would seem to be too trivial to be used thus. *Neoscleropogon* is coupled by him with that section of *Scleropogon* that has the posterior part of this sclerite bare, but Australian forms of the genus *Stenopogon* form a homogeneous group that may or may not be bare in this region.

There is only one character given by Malloch in his definition of *Neoscleropogon* that appears to me to hold true, namely, the long pleural hairs. I have attempted to give a better interpretation in the key in regard to this and other subgenera already proposed, but it seems inadvisable to maintain subgenera at the present time when the genera are so poorly understood.

In my figure of the genitalia (Proc. Linn. Soc. N.S.W., li, 1926, 310), illustrated as that of *S. elongatus*, but later shown to be that of *S. fraternus* Bigot, one of the forms confused under the former name, the parts labelled should be corrected as follows: for *d.p.* read *v.p.*; for *u.f.* read *l.f.* and for *l.f.* read *u.f.*; this and all other hypopygia on Australian species are inverted, so the dorsal plate

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(*d.p.*) there referred to, becomes the ventral plate (*v.p.*), and the names of the forceps, upper and lower, need reversing.

Genus Ospriocerus Loew.

This North American genus belongs to the *Stenopogon* group, but it differs very considerably in the antennae; the third segment is very long, and the fourth very short, and both together are about three times the length of the basal ones united.

Tribe Stichopogonini, n. tribe.

To this tribe, hitherto left unnamed by me, and which contains two Australian genera, *Clinopogon* and *Cryptopogon*, belong also the American genera *Lasiopogon*, *Neopogon* and, I believe, *Stichopogon*; the last of these I have not seen. *Holocephala*, *Laphystia* and *Psilocurus* do not come within the definition of the group.

Key to genera of the tribe Stichopogonini.

1. Tubercle very large, occupying nearly the whole of the face and containing long erect hairs throughout its length. Hypopygium inverted .... *Lasiopogon* Loew.
   Tubercle moderate in size. If long hairs occur on the face above tubercle, they are strongly depressed and lie over the moustache. Hypopygium normal 2
2. Moustache more or less restricted to the oral margin, the hairs above it being short and inconspicuous 3
   Moustache not so confined, long dense hairs overlying the bristles on the tubercle ..... *Clinopogon* Bezzi.
3. Species with rather long abdomen. One presutural and one postalar pair of bristles only present ..... *Neopogon* Bezzi.
   Species with shorter, normal abdomen. More than two pairs of thoracic bristles present ..... *Cryptopogon* White.

Genus Lasiopogon Loew.

The American species of this genus comes within this tribe, and although Lundbeck, when describing the European form, does not mention the character of the prothorax, the description he gives fits here too. Lundbeck draws attention to the inverted hypopygium, a character I find also occurring on the American specimen. Melin, recording the habits of copulation, states: "the two sexes sit with their abdomen in a straight line, facing in opposite directions", which is in keeping with the inverted hypopygium, but Melin makes no mention of this fact. Lundbeck refers to *Cyrtopogon* Loew, as being nearly related, but that genus has a superficial resemblance to it and I am unable to maintain the supposed relationship.

Genus Neopogon Bezzi.

Of this genus I have seen two American species. It is regarded as being a synonym of *Stichopogon* by many, but I have not seen the latter genus which is the first described of this group and therefore used for the tribal name. There may be some doubt also if *Clinopogon* and *Cryptopogon* are worthy of separate generic status, but *Neopogon* seems to be consistently different in chaetotaxy as well as shape of the abdomen; the two Australian genera are only to be distinguished from each other by the nature of the moustache. The three genera form a natural group having many characters in common with *Lasiopogon*, to which they are undoubtedly allied.

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